

WEATHER OF NORTH AMERICAN AND ADJACENT OCEANS.

NORTH ATLANTIC OCEAN.

By F. A. YOUNG.

The average pressure for February, 1922, was somewhat above the normal at land stations in Canada, the Azores, and Bermudas; below in the British Isles, while on the coast of the United States and in the West Indies the departures were slight.

Few fog reports were received from vessels, and it was observed at land stations in Great Britain on a few days in the first decade of the month.

Gales were unusually prevalent, especially over the mid section of the steamer lanes. In the 5° square between latitude 45° and 50° N. and longitude 35° and 40° W. winds of gale force were reported at the Greenwich mean noon observation on 16 days, a percentage of 57, while the normal for that square, as shown on the Pilot Chart, is 29 per cent.

Charts IX, X, and XI show the conditions on the 1st, 2d, and 3d, respectively, when a well-developed Low covering an extensive area moved rapidly eastward, while there was also a second disturbance south of Newfoundland on the 3d. Storm logs follow:

American S. S. Santa Rosalia:

Gale began January 30, wind SE., 8. Lowest barometer 28.75 inches at 7 p. m. on the 1st, wind SW., 11, in latitude 47° 15' N. longitude 29° 15' W. End on the 2d, wind W. Highest force of wind 11, SW.; shifts SE.-SSE.-S.-SW.-W.

American S. S. Satartia:

Gale began January 31, wind SSE. Lowest barometer 28.65 inches at 7 a. m. on the 1st, wind SW., in latitude 42° 44' N., longitude 36° 36' W. End on the 2d, wind NW. Highest force of wind 12, SW.; steady from SW.

British S. S. Albania:

Gale began on the 2d, wind SSW. Lowest barometer 29.06 inches at noon on the 2d, wind N., 10, in latitude 50° 36' N., longitude 16° 30' W. End on the 3d, wind NW. Highest force of wind 10, W.; shifts W.-WNW.

American S. S. Western Plains:

Gale began on the 3d, wind SW. Lowest barometer 29.51 inches at 8 a. m. on the 3d, wind SW., 8, in latitude 40° 38' N., longitude 57° 50' W. End on the 4th, wind NW. Highest force of wind 8; shifts SW.-W.-NW.

On the 4th heavy weather still prevailed over a large portion of the ocean and along the shores of the British Isles, while on the 5th and 6th the storm area was restricted to the region west of the fortieth meridian. Storm logs follow:

Dutch S. S. Veendijk:

Gale began on the 4th, wind W. Lowest barometer 29.71 inches at 4 a. m. on the 5th, wind W., 9, in latitude 36° 05' N., longitude 12° 36' W. End on the 5th, wind SSE. Highest force of wind 9, W.; shifts W.-NW.-N.-NE.-E.-SSE.

American S. S. Oregonian:

Gale began on the 6th, wind S. Lowest barometer 29.42 inches at 4 a. m. on the 7th, wind S., 7, in latitude 48° 47' N., longitude 18° 25' W. End on the 7th, wind NW. Highest force of wind 9; shifts S.-NNW.

Charts XII, XIII, and XIV represent the conditions on the 7th, 8th, and 9th, respectively. On the 7th a strong "norther" prevailed in the Gulf of Mexico, accompanied by comparatively high barometric readings, as shown by the following storm log:

American S. S. Gulfqueen:

Gale began on the 6th, wind SW. Lowest barometer 29.84 inches at 10 a. m. on the 6th, wind N., 8, in latitude 25° 50' N., longitude 96° 10' W. End on the 7th, wind N. Highest force of wind 8, N.; shifts NE.-N.

On the 7th moderate westerly and southwesterly gales occurred off the American coast between Hatteras and Charleston, and there was also a low over Newfoundland, with a limited storm area between the fortieth and forty-fifth parallels and the fortieth and sixtieth meridians. Storm log:

British S. S. Mercian:

Gale began on the 7th, wind SSE. Lowest barometer 28.70 inches at 4 p. m. on the 8th, wind SW., 10, in latitude 43° 51' N., longitude 53° 25' W. End on the 8th, wind W. Highest force of wind 10, SW.; shifts S.-SW.-W.

On the 8th winds of gale force were prevalent over the greater part of the ocean west of the twentieth meridian, while by the 9th the most severe weather occurred between the fortieth and sixtieth meridians. Storm logs:

American S. S. Oklahoma City:

Gale began on the 7th, wind SW. Lowest barometer 29.17 inches at 11 p. m. on the 7th, wind SW., 12, in latitude 37° 40' N., longitude 62° 29' W. End on the 9th, wind NNW. Highest force of wind 12, SW.; shifts SW.-NW.

Norwegian S. S. Foldenford:

Gale began on the 8th, wind S. Lowest barometer 29.13 inches at midnight on the 8th, wind SW., 11, in latitude 47° 30' N., longitude 42° 15' W. End on the 10th, wind NNW. Highest force of wind 12, SW.; shifts S.-SW.-W.-NW.-NNW.

From the 10th to the 15th conditions did not change materially, as during that period portions of the steamer lanes were swept by moderate to strong gales. Storm logs:

American S. S. W. H. Tilford:

Gale began on the 11th, wind WSW. Lowest barometer 30 inches at 4 a. m. on the 11th, wind WSW., in latitude 38° 12' N., longitude 53° 25' W. End on the 14th, wind SW. Highest force of wind 11, SW.; shifts SSW.-W.

British S. S. Winnebago:

Gale began on the 11th, wind S. Lowest barometer 30.09 inches at midnight on the 12th, wind SSW., 9, in latitude 74° 45' N., longitude 38° 50' W. End on the 13th, wind SW. Highest force of wind 9, SSW.; shifts SSW.-SW.

Norwegian S. S. Rannenford:

Gale began on the 14th, wind W. Lowest barometer 29.84 inches at 8.16 a. m. on the 14th, wind W., 10, in latitude 45° 08' N., longitude 50° 55' W. End on the 14th, wind W. Highest force of wind 11; steady from the west.

On the 15th the second "norther" of the month appeared in the western part of the Gulf of Mexico, and winds of from 40 to 65 miles an hour were reported from a limited territory in the vicinity of New Orleans and Galveston.

Charts XV and XVI represent the conditions on the 16th and 17th where heavy weather prevailed over various portions of the ocean. Storm logs.

American S. S. Wm. G. Warden:

Gale began on the 16th, wind WNW. Lowest barometer 29.87 inches at 2 p. m. on the 16th, wind WNW., 7, in latitude 24° 56' N., longitude 80° 25' W. End on the 17th, wind NE. Highest force of wind 9; shifts SSW.-NW.

Danish S. S. United States:

Gale began on the 15th, wind WSW. Lowest barometer 29.06 inches at 2 p. m. on the 15th, wind WSW., 9, in latitude 58° 03' N., longitude 18° 30' W. End on the 17th, wind W. Highest force of wind 9, WSW.; steady WSW.

British S. S. River Orontes:

Gale began on the 17th, wind S. Lowest barometer 30.02 inches at 1.30 p. m. on the 17th, wind S., in latitude 34° 57' N., longitude 53° 08' W. End on the 17th, wind W. Highest force of wind 10; shifts WSW.-W.

During the remainder of the month the ocean north of the fortieth parallel was swept by one disturbance after the other, with hardly any interval between the storms. On the 22d all of the 16 reporting vessels between the fiftieth meridian and the European coast, north of the fortieth parallel, encountered gales of from 40 to 65 miles an hour, with hail and snow in the western section. On the 23d the most severe weather occurred between the thirtieth and fiftieth meridians, and from that date until the end of the month southerly gales also prevailed off the coast of Europe. Storm logs.

American S. S. *Potomac*:

Gale began on the 18th, wind SW. Lowest barometer 29.48 inches at 2 a. m. on the 21st, wind NW., 9, in latitude 49° 48' N., longitude 19° 50' W. End on the 21st, wind WSW. Highest force of wind 9, NW.; shifts NW.-W.

British S. S. *Kenbane Head*:

Gale began on the 18th, wind SW. Lowest barometer 29.12 inches at 12.17 a. m. on the 19th, wind WSW., 9, at latitude 52° 36' N., longitude 22° W. End on the 20th, wind S. Highest force of wind 12, in squalls; shifts SW.-WSW.

U. S. Coast Guard S. S. *Seneca*:

Gale began on the 20th, wind W. Lowest barometer 29.80 inches at noon on the 22d, wind NW., in latitude 44° 49' N., longitude 48° 20' W. End on the 24th, wind NW. Highest force of wind 11, NW.; steady from NW.

American S. S. *Carplaka*:

Gale began on the 21st, wind WSW. Lowest barometer 29.74 inches at 8 a. m. on the 23d, wind W., in latitude 39° 56' N., longitude 39° 40' W. End on the 25th, wind WSW. Highest force of wind 10, W.; steady from west.

American S. S. *City of Freeport*:

Gale began on the 24th, wind SSW. Lowest barometer 29.57 inches at 1 p. m. on the 25th, wind SSW., 9, in latitude 51° 10' N., longitude 8° 15' W. End on the 25th, wind W. Highest force of wind 9, SSW.; shifts SSW.-W.

British S. S. *Vasconia*:

Gale began on the 24th, wind SW. Lowest barometer 28.86 inches at 3 a. m. on the 25th, wind W. 11, in latitude 46° 23' N., longitude 32° 55' W. End on the 26th, wind W. Highest force of wind 11; shifts SW.-SW. by S.

Swedish S. S. *Stockholm*:

Gale began on the 24th, wind SSW. Lowest barometer 28.78 inches at 11 p. m. on the 24th, wind SSW., in latitude 57° N., longitude 19° 25' W. End on the 25th, wind WSW. Highest force of wind 9; shifts SSW.-SW.-WSW.

British S. S. *Clan Malcolm*:

Gale began on the 26th, wind SW. Lowest barometer 29.45 inches at 4 a. m. on the 28th, wind SW., in latitude 52° 15' N., longitude 5° 23' W. End on the 28th, wind W. Highest force of wind 10, SW.; shifts SSW.-W.

British S. S. *Alpine Range*:

Gale began on the 25th, wind SSW. Lowest barometer 28.80 inches on the 28th, wind SW., 9, in latitude 56° 25' N., longitude 14° 55' W. End on the 28th, wind W. Highest force of wind 10; shifts WSW.-S.

NORTH PACIFIC OCEAN.

By F. G. TINGLEY.

Measured by the number of gales reported the weather on the North Pacific Ocean in February was nearly normal in character. The number of days on which

gales were experienced was somewhat less than in 1920 and 1921 and slightly greater than in 1919. Pressure conditions over the more northerly portions of the ocean were abnormal, however. Beginning on the 1st the barometer rose rapidly at Dutch Harbor, where it had been uniformly low since the end of December, and by the afternoon of the 5th had reached a height of 30.84 inches, or about 1.26 inches above normal. Just a month before, on January 5, a barometer reading of 28.40 inches had been recorded at that place. Previous high pressures observed at Dutch Harbor are as follows: 30.94 inches on January 4, 1916, 30.86 inches, March 7, 1918, 30.74 inches, January 19, 1920.

At Honolulu and Midway Island pressure conditions were not specially marked, being approximately normal for the month at both places. On the 16th, when a depression moved northward immediately to the east of Midway Island, the barometer at that place fell to 29.34 inches, the lowest point reached during the month.

February opened with a well-defined anticyclone extending westward from the American coast and an energetic depression over Bering Sea. Vessels east of the Hawaiian Islands on the 1st to 3d were experiencing fresh to moderate northeast gales under conditions similar to those noted during the last week of January. On the 4th there were evidences of an anticyclone advancing eastward from Siberia and by the afternoon of the 5th abnormally high pressure was established over the Aleutians, Bering Sea, and northwestern Alaska. On the front of this area of high pressure a vigorous cyclone developed in the eastern Gulf of Alaska with strong to whole westerly gales prevailing over areas to the southward. On February 4, eastern time, in conjunction with the high pressure area just referred to and another one of somewhat less magnitude over Mongolia a deep depression formed to the eastward of Japan, having a central isobar of 28.98 inches. This depression moved northeastward to Bering Sea, where it dissipated during the 8th. Several reporting vessels on its eastern and southern sides, though at some distance from the center, experienced southerly to westerly gales, reaching force 11 in some cases. Typical storm logs are as follows:

American S. S. *Hoosier State*, Capt. Thomas Blau. Observer W. N. Calcutt, Yokohama (February 1) for Manila:

Gale began on 4th, wind SSE. Lowest barometer, 30.17 inches, occurred at 4 p. m., same date, in 34° N., 162° 58' E., wind at time being SE., 9. Gale ended at 10 p. m. of 5th. No shifts in wind. Highest force, 9

American S. S. *Viniti*, Capt. G. Johnsen, Observer A. G. Graham, Dairen (January 28) for Portland:

Gale began on 3d, wind SSE. Lowest barometer, 29.10 inches, occurred at noon of 4th in 42° 50' N., 154° 47' E., wind remaining at SSE. Gale ended same day. Highest force, 11. Shifts, SSE., SSW.

During the period from the 7th to the 10th low pressure prevailed off the American coast, the anticyclone which had occupied the region toward the Hawaiian Islands having suddenly, on the 5th, advanced eastward over the continent. On its front strong northers prevailed in the Gulf of Mexico and Gulf of Tehuantepec. The American S. S. *Newport*, Capt. G. McKinnon, Observer W. N. Prencel, felt the full force of this norther on the 7th when proceeding from Champerico to Salina Cruz.